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Provision of an Effective Watershed Development Program in Drought Areas

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Abstract: **A watershed, moreover known as drainage basin, is an area in which the entire water flowing into it goes to a general outlet. Program of watershed development is an efficient tool for addressing quite a lot of problems and it is recognized as a promising engine for agriculture growth as well as improvement in fragile as well as marginal rain-fed areas. The Project management of any watershed program is particularly necessary and it generally depends upon community organization as well as village level institutes. Our present project is situated at Chevella in Rangareddy district. The most important aim of our project is provision of a Watershed where drought is more. By provision of watershed we can progress the surrounding area of agriculture as well as peoples social-economical improvement by means of improvising water table.**

Keywords: **Watershed, Drainage basin, Drought, Rain-fed areas, Agriculture, Water table.**

INTRODUCTION

As an effect of increased global population, water for food production is turning into more and more scarce resource, and situation is further aggravated by means of climate change [1]. The rainfed areas are hotspots of poverty, food insecurity, prone towards strict land degradation, water security as well as poor social infrastructure. The program of watershed development is, thus, considered as an efficient tool for addressing several problems and it is identified as a promising engine for agriculture growth as well as development in fragile as well as marginal rain-fed areas. People as well as livestock are important part of watershed and their actions have an effect on productive status of watersheds as well as vice versa. Watershed is hydrological unit and moreover sociopolitical-ecological entity which is important in determining of food, social, as well as economical security and offers life support services towards rural people. Managing of natural resources at watershed scale produce numerous benefits regarding increased food production, improving of livelihoods, protection of environment and moreover addressing biodiversity concerns. From the hydrological viewpoint, various phases of hydrological cycle within a watershed are dependent on a variety of natural features as well as human activities. Projects of Watershed development within country has been implemented by Government of India from the early 1970s. Watershed management as an approach has been accepted by the Government of India particularly in the rain-fed regions of semi-arid tropics. These regions are distinguished by means of low and undependable rain, low soil fertility, reduced infrastructure improvement, low literacy as well as high incidence of migration [2][3]. Several studies have identified that there is a direct requirement of an organized as well as scientific approach to manage watershed development. The general guidelines produce a fresh as well as flexible structure for next generation watershed improvement.

Fig: An overview of watershed

REQUIREMENT FOR THE PROGRAM OF WATERSHED DEVELOPMENT

The program of watershed development is prioritized on basis of various parameters such as Poverty Index, Actual wages, Percentage of small as well as marginal farmers, status of ground water, Drinking water circumstances within area, Productivity potential of land, and so on. Based on these parameters a composite ranking was provided towards chevella Watershed project as specified. Rain fed agriculture is the basic occupation of

village because of fact that ground water is salty and therefore unfit for usage. More than sixty percent of farmers are marginal by nature and actual wages earned by labor is less than minimum wages. Drinking water is difficult within village. Most of land is degraded because of unavailable of water. The soil is extremely permeable and production of land is considerably enriched by accessibility of timely irrigation. The Project management of any watershed program is extremely essential and it mostly depends upon community organization as well as village level institutes. An appropriate linkup will be build throughout project period with different institutes and capacity building organization. They act as a most important key player during post execution for scaling up unbeaten experience during project [4]. The selection of Project Implementing Agencies is done by suitable mechanism by Telangana State Watershed Management Agency, State Level Nodal Agency in support of Integrated Watershed Management Program within Telangana region. Project Implementing Agencies are accountable for execution of watershed project and these project implementing agencies might include applicable line departments, autonomous organizations in State or Central Governments, Research bodies, Intermediate, Voluntary Organizations and so on. The Project Implementing Agencies in support of chevella watershed Project is District watershed Management Agency, Rangareddy area. The agency of District Watershed Management was established to manage the smooth execution of watershed projects within district. The Project management of any watershed program is extremely essential and it mostly depends upon community organization as well as village level institutes. An appropriate linkup will be build throughout project period with different institutes and capacity building organization. They act as a most important key player during post execution for scaling up unbeaten experience during project.

METHODOLOGY

Our present project is situated at Chevella and the most important aim of our project is provision of a Watershed where drought is more. By provision of watershed we can progress the surrounding area of agriculture as well as peoples social-economical improvement by means of improvising water table. Employment Migration is decreased, development in Ground water table, accessibility of Drinking water, production of Crops yield, increase in Vegetative cover as well as Livestock progression and for these reasons we carry out the survey on how the process of social economical expansion has taken place in this region and for that we involving people and various organizations for improved development of water management system. Watersheds are significant because surface water features as well as storm water runoff within watershed finally drain towards other water bodies. It is necessary to consider these impacts during implementation of water quality protection as well as restoration actions. We need to consider that we all live downstream and that our daily actions can have an effect on downstream waters. For our project, we carry out survey which helps to get better management system with resourcefully and financial consideration for completion of project. Prior to the project initiation, the site selection is more significant which will provide benefit to that region as well as cost of work will be cost-effective [5]. The next significant thing is gathering of data is most important source that is catchment area, rainfall intensity ground topography and so on which provides proper drawings as well as estimations. When this estimate is recognized, by means of estimated cost of project we can present a report to government intended for releasing funds and other organizations to finish the project in a successful means. Several studies have identified that there is a direct requirement of an organized as well as scientific approach to manage watershed development. The common guidelines produce a fresh as well as efficient structure for next generation watershed improvement. The Project management of any watershed program is extremely essential and it mostly depends upon community organization as well as village level institutes. A Web-based GIS System is used for monitoring as well as evaluation of the project in its planning and implementation phases. The system would be obtainable on a public domain and is accessed by the entire the stakeholders of project. The system would moreover explain the satellite imageries of various years from project initiation stage to closing stages which permits user to assess efficiency of treatment and thus plan counteractive measures for project area. The system would be used as an aiding tool in the direction of planners as well as evaluators for judging effectiveness of project. There is a need to build cement based check dams for the purpose of recharge in small watersheds. These store surface water for usage of both during and after the monsoon and helps in ground water recharge of area. Farmers construct ponds for lot of reasons such as Irrigation, water in support of livestock and so on. Rock fill dams have a tendency to make use of aggregate extracted from near mining sites to make them resistant. Trenches can be artificially dug all along contour lines. Water flowing down hill is retained by means of the trench, and is infiltrating soil below. Among two trenches crops can advantage during growing season from subsoil water reserve gathered throughout rainy season. The staggered trenching Includes excavation of trenches of short length in a row all along the contour with interspaced among them. These trenches are set in straight line.

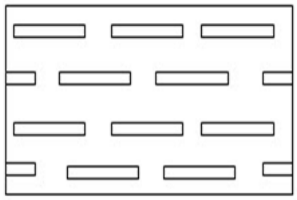

Fig: staggered trenches.

CONCLUSION

Program of watershed development is an efficient tool for addressing several problems. Managing of natural resources at watershed scale produce numerous benefits regarding increased food production, improving of livelihoods, protection of environment and moreover addressing biodiversity concerns. Our project provides several outcomes such as Employment Migration is decreased, development in Ground water table, accessibility of Drinking water, production of Crops yield, increase in Vegetative cover as well as Livestock progression. Moreover in the future works it helps to make sure that advantageous uses of water resources as well as other related resources are continued. It helps to achieve approved management targets for water as well as related resources. It moreover helps to solve to reduce local susceptibility towards climatic extremes.

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